



FT8301A Miniature Fiber Transmitter



Single-Channel Digitally Encoded Video

C1680M (1/06)

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Important Safety Instructions

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the points where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
14. Apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases shall be placed on the apparatus.
15. **WARNING:** To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.
16. Installation should be done only by qualified personnel and conform to all local codes.
17. Unless the unit is specifically marked as a NEMA Type 3, 3R, 3S, 4, 4X, 6, or 6P enclosure, it is designed for indoor use only and it must not be installed where exposed to rain and moisture.
18. Use only installation methods and materials capable of supporting four times the maximum specified load.
19. A CCC-approved power cord must be used to power this equipment when used in China.
20. **CAUTION:** These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

The product and/or manual may bear the following marks:



This symbol indicates that dangerous voltage constituting a risk of electric shock is present within this unit.



This symbol indicates that there are important operating and maintenance instructions in the literature accompanying this unit.

| |
|---|
| CAUTION: |
| RISK OF ELECTRIC SHOCK. DO NOT OPEN. |

Regulatory Notices

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

RADIO AND TELEVISION INTERFERENCE

This equipment has been tested and found to comply with the limits of a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Changes and Modifications not expressly approved by the manufacturer or registrant of this equipment can void your authority to operate this equipment under Federal Communications Commission's rules.

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

Product Overview

DESCRIPTION

The FT8301A miniature fiber transmitter provides the ability to transmit one composite video channel over one optical fiber. The FT8301A transmitter is compatible with the single-channel FR8301A and dual-channel FR8302A receivers. In addition, the FT8301A transmitter is backward compatible with the single-channel FR8301 receiver.

Specially designed for use in Pelco® EH2515/EH3512/EH3515 Series camera enclosures and DF5/DF8 Series fixed mount domes, the FT8301A transmitter can also be used as a standalone module (refer to Figure 1).

Features of the FT8301A transmitter include the following:

- 8-bit digitally encoded video for high-quality video transmission over a single fiber
- Multimode fiber support for distances up to 6 km (3.7 mi)
- Single-mode fiber support for distances up to 46 km (28.6 mi)
- Exceeds all requirements for the RS-250C Medium-Haul Transmission specification
- Compatible with NTSC, PAL, and SECAM video standards
- Designed to meet NEMA TS 2 and Caltrans traffic signal control equipment standards for ambient operating temperature, mechanical shock and vibration, humidity with condensation, high-line/low-line voltage conditions, and transient voltage protection

NOTE: Conformal coating is required for operation in environments with relative humidity above 95% (condensing).

- No performance adjustments required
- 12 VDC or 24 VAC power supply
- LED indicators for monitoring of signal status and laser status

The FT8301A transmitter is a Class 1 laser product that complies with FDA radiation performance standard 21CFR Subchapter J and with IEC 60825-1 Edition 1.2, 2001-08.

MODELS

The FT8301A transmitter consists of the following series of models:

Multimode Models:*

FT8301AMST Single-channel fiber optic video transmitter; multimode, ST connector; transmission distance up to 2 km

FT8301AMSTE Single-channel fiber optic video transmitter; multimode, ST connector; transmission distance up to 6 km (extended distance)

Single-Mode Models:*

FT8301ASST Single-channel fiber optic video transmitter; single-mode, ST connector

FT8301ASFC Single-channel fiber optic video transmitter; single-mode, FC connector

*For conformal coated models, replace the first letter *F* in the model number with the letter *C*. The conformal coated version of FT8301AMST, for example, is CT8301AMST.

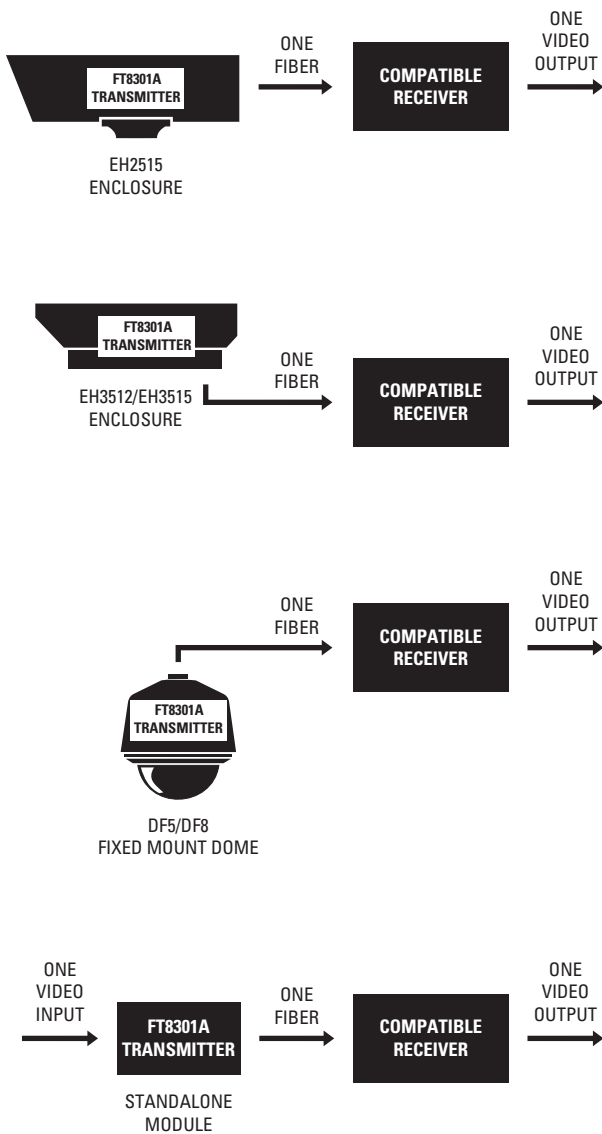


Figure 1. Single-Channel Video Transmission Using FT8301A Transmitter

FRONT PANEL

The front panel of the FT8301A transmitter provides connectors and LED indicators (refer to Figure 2).

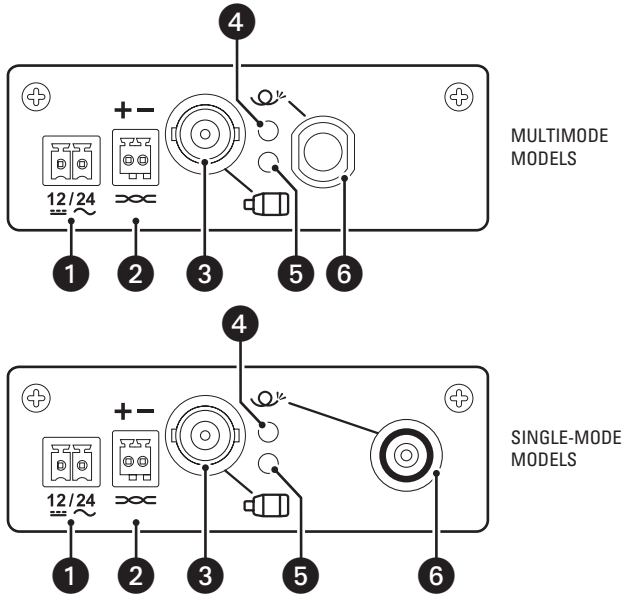


Figure 2. Front Panel of FT8301A Transmitter—Multimode and Single-Mode Models

- 1 POWER CONNECTOR, 2-pin connector; removable mating connector with screw terminals (not shown)
- 2 VIDEO IN UTP (UNSHIELDED TWISTED PAIR) CONNECTOR, 100-ohm differential analog video input; 2-pin connector; removable mating connector with spring-cage terminals (not shown)
- 3 VIDEO IN BNC CONNECTOR, 75-ohm analog video input
- 4 OPTIC FAULT LED, laser status indicator
- 5 VIDEO PRESENT LED, video signal status indicator
- 6 FIBER OPTIC CONNECTOR, ST (multimode and single-mode models) or FC (single-mode models only)

NOTE: The FT8301A transmitter provides two video input connectors: one UTP connector and one BNC connector. Only one of the connectors can be used at one time.

For additional information about front-panel connections, refer to the *Installation* section. For additional information about the front-panel indicators, refer to the *Troubleshooting* section.

Installation

PACKAGE CONTENTS

The following items are supplied:

- 1 FT8301A transmitter with attached left and right wall-mounting brackets
- 1 Regulated switching power supply with four plug adapters (North American, Australian, U.K., and European configurations); 100-240 VAC, 50-60 Hz input, 12 VDC output
- 1 BNC-to-BNC RG179/U coaxial cable
- 1 EH2500 Series accessory kit, which contains the following:
 - 1 EH2500 bracket
 - 2 4-40 x 0.187-inch Phillips flat head screws
 - 1 10-32 x 0.375-inch Phillips pan head screw and lock washer

The EH2500 Series accessory kit must be used when installing the FT8301A transmitter into an EH2515 Series enclosure.

- 1 EH3500 Series accessory kit, which contains the following:
 - 2 EH3500 brackets (one left, one right)
 - 4 4-40 x 0.25-inch Phillips pan head screws and lock washers
 - 1 Replacement gland
 - 1 Rubber plug

The EH3500 Series accessory kit must be used when installing the FT8301A transmitter into an EH3512/EH3515 Series enclosure.

- 1 DF5/DF8 Series accessory kit, which contains the following:
 - 1 DF5/DF8 bracket
 - 4 4-40 x 0.187-inch Phillips flat head screws

The DF5/DF8 Series accessory kit must be used when installing the FT8301A transmitter into a DF5/DF8 fixed mount dome.

- 1 FT8301A Miniature Fiber Transmitter Installation manual (this manual)

CONNECTIONS

Before mounting the FT8301A transmitter, note the following transmitter connections (refer to Figure 3):

- Power connection

NOTES:

- A 12 VDC or 24 VAC power supply can be used to power the transmitter. A 12 VDC power supply is provided. If a 24 VAC power supply is used, the power supply must be a Listed Direct Plug-In Power Unit marked as Class 2 and rated as 24 VAC, 200 mA (minimum output).
- In extreme temperature conditions, it is recommended that an industrial-rated outdoor power supply such as the Pelco WCS1-4 power supply be used.
- Fiber connection
- Video input connection (UTP or BNC per channel)

NOTE: When connecting to the UTP connector, it is recommended that solid UTP wire rather than stranded UTP wire be used. If stranded UTP wire is used, it is recommended that you tin the stranded wire.

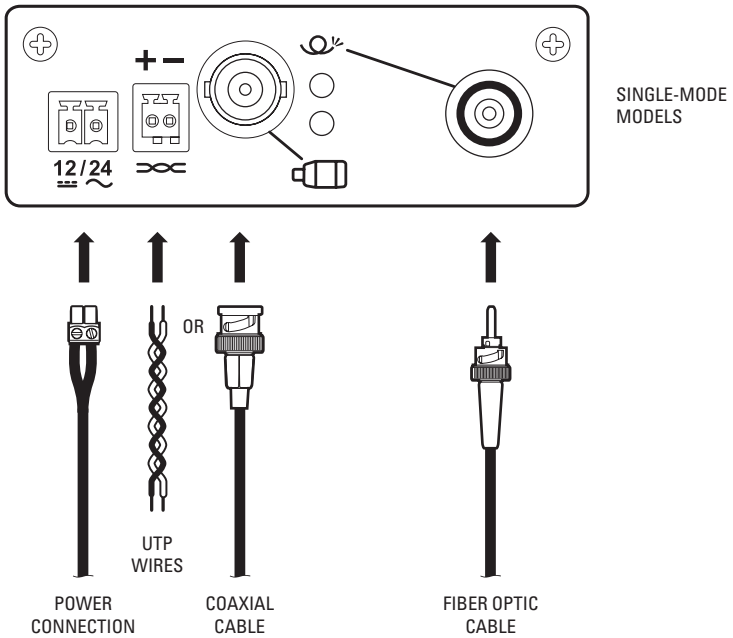
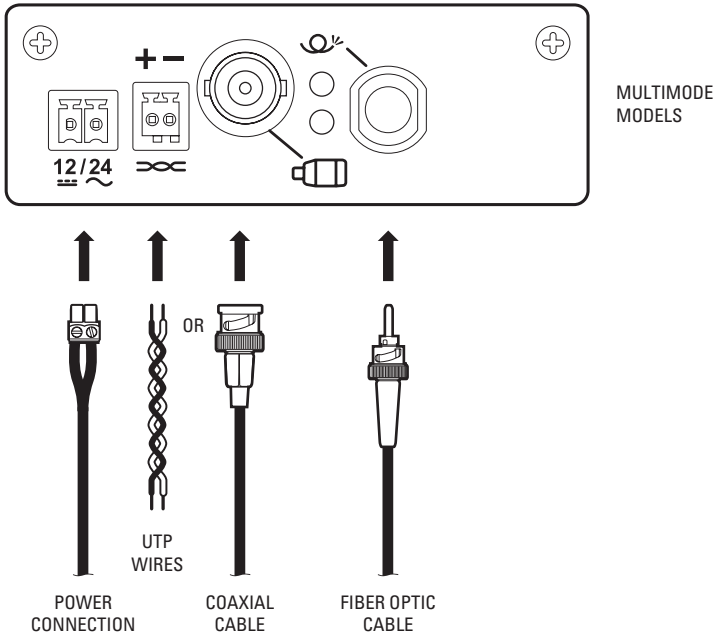


Figure 3. FT8301A Transmitter Connections

MOUNTING

This section provides information about the following:

- Mounting the transmitter to a wall
- Mounting the transmitter into an EH2515 Series enclosure
- Mounting the transmitter into an EH3512/EH3515 Series enclosure
- Mounting the transmitter into a DF5/DF8 fixed mount dome

Note that the transmitter can also be placed on a desktop.

MOUNTING THE TRANSMITTER TO A WALL

NOTE: Before mounting the transmitter to a wall, ensure that the positioning of the unit allows viewing of the LEDs and provides space for making the various cable connections.

The transmitter is shipped with attached left and right wall-mounting brackets. To mount the transmitter to a wall, attach the unit with two screws (not provided) using the wall-mounting keyholes (refer to Figure 4).

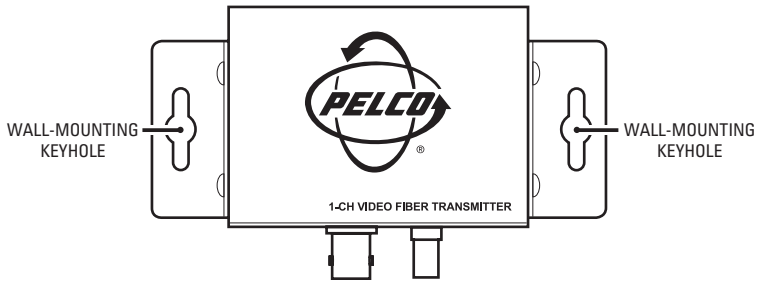



Figure 4. Mounting FT8301A Transmitter to a Wall (Top View of Transmitter)

MOUNTING THE TRANSMITTER INTO AN EH2515 SERIES ENCLOSURE

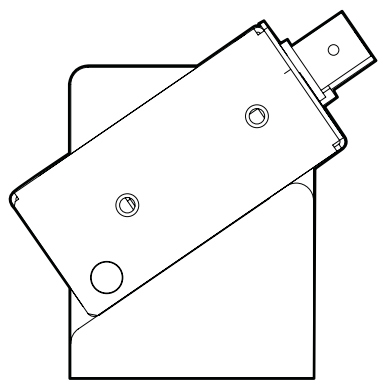
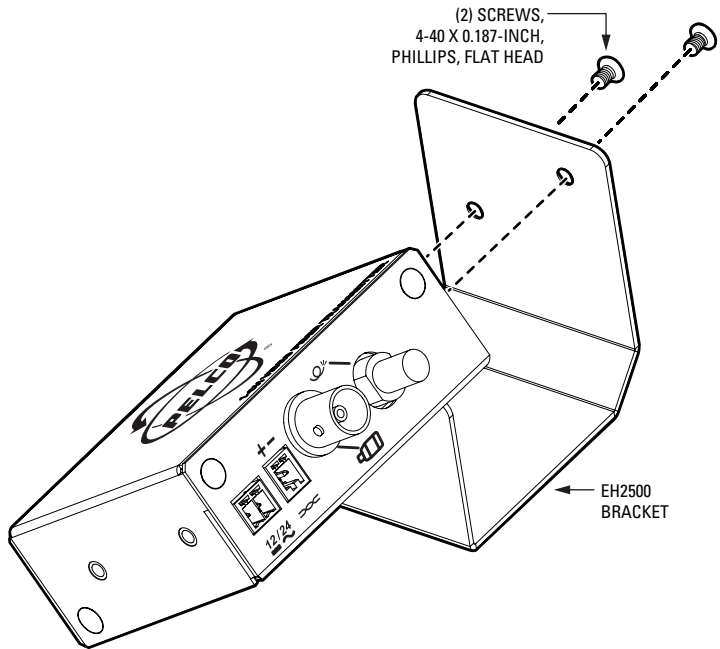
The following procedure provides instructions to mount the FT8301A transmitter into an existing EH2515 Series enclosure installation.

To mount the transmitter into an EH2515 Series enclosure, do the following:

1. Using a small Phillips screwdriver, remove the left and right wall-mounting brackets that are attached to the transmitter by loosening the four 4-40 x 0.25-inch Phillips pan head screws (two screws each side).
2. Using the EH2500 bracket and the two 4-40 x 0.187-inch Phillips flat head screws supplied in the EH2500 accessory kit, attach the bracket to the transmitter (refer to Figure 5). Note that the transmitter must be positioned at an angle within the bracket.
3. Disconnect power to the enclosure.
4. Remove the camera sled from the enclosure by doing the following:
 - a. Using a 5/64-inch hex wrench, loosen the screws on the back of the enclosure.
 - b. Pull the "T" handle until heater wiring connectors, if present, are visible, and then disconnect the heater wiring connectors.



WARNING: Damage to the heater wires can occur if the sled is pulled out too far before the wiring connectors are separated.



SIDE VIEW OF EH2500
BRACKET WITH ATTACHED
FT8301A TRANSMITTER

Figure 5. Attaching EH2500 Bracket to FT8301A Transmitter

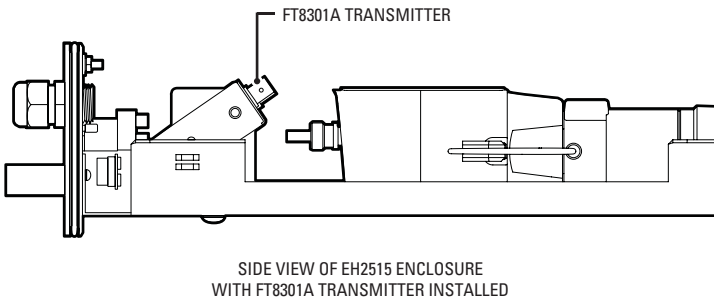
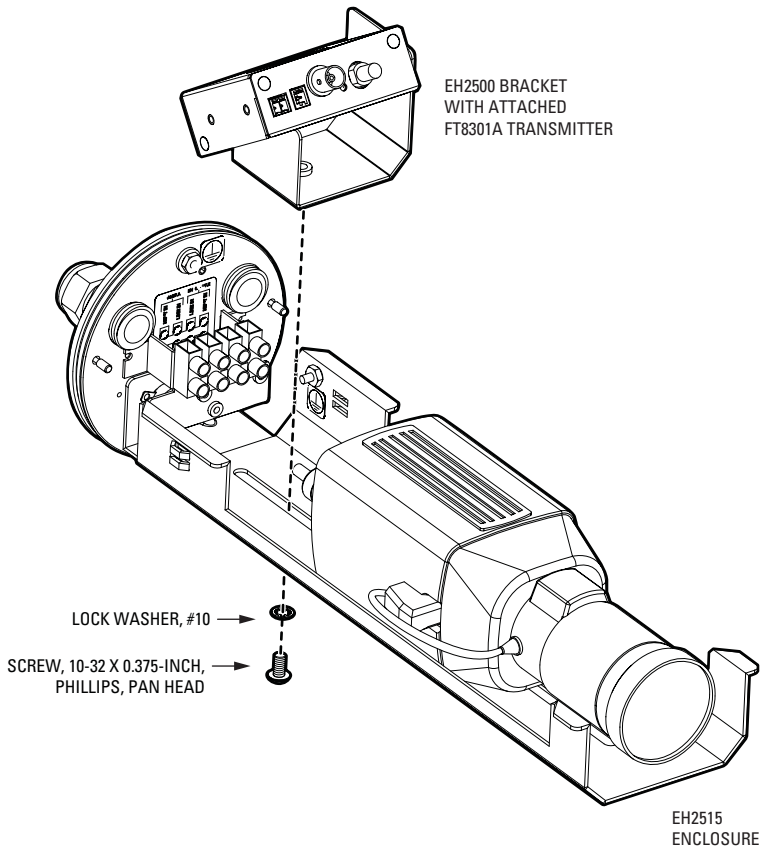


Figure 6. Mounting FT8301A Transmitter into EH2515 Enclosure

7. Connect power, fiber optic, and video cables to the transmitter by doing the following:
 - a. Insert the power cable through either of the two gland connectors on the enclosure, route the cable underneath the transmitter toward the power connector on the transmitter, and then connect the cable to the power connector.
 - b. Insert the fiber optic cable through either of the two gland connectors on the enclosure, and then do the following:



WARNING: When routing the fiber optic cable, be careful not to bend the fiber at a sharp angle. Doing so breaks the fiber.

- (1) Route the cable above the transmitter and then along one side of the camera until you can loop the cable underneath the lens; then route the cable back along the other side of the camera toward the fiber optic connector on the transmitter (refer to Figure 7).
 - (2) Connect the cable to the fiber optic connector on the transmitter.
- c. Using the coaxial cable supplied with the transmitter, connect the cable to the BNC connector on the transmitter and on the camera.
- NOTE:** For additional information about connections to the transmitter, refer to the *Connections* section.
8. Reconnect power to the camera.
 9. If applicable, reconnect the heater wires of the enclosure.
 10. Carefully slide the camera sled back into the enclosure.
 11. Reinstall the screws in the rear plate.
 12. Reconnect power to the enclosure.

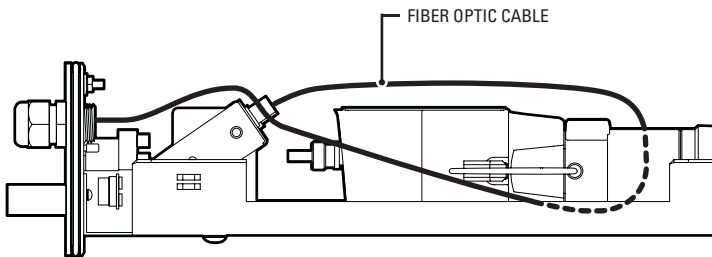


Figure 7. Routing Fiber Optic Cable in EH2515 Enclosure

MOUNTING THE TRANSMITTER INTO AN EH3512/EH3515 SERIES ENCLOSURE

The following procedure provides instructions to mount the FT8301A transmitter into an existing EH3512/EH3515 Series enclosure installation.

To mount the transmitter into an EH3512/EH3515 Series enclosure, do the following:

1. Using a small Phillips screwdriver, remove the left and right wall-mounting brackets that are attached to the transmitter by loosening the four 4-40 x 0.25-inch Phillips pan head screws (two screws each side).
2. Using the left- and right-mounting EH3500 brackets and the four 4-40 x 0.25-inch Phillips pan head screws and lock washers supplied in the EH3500 Series accessory kit, attach the brackets to the transmitter (refer to Figure 8). Note that the left- and right-mounting brackets are marked **L** and **R**, respectively, to indicate the side of the transmitter to which each bracket should be mounted.

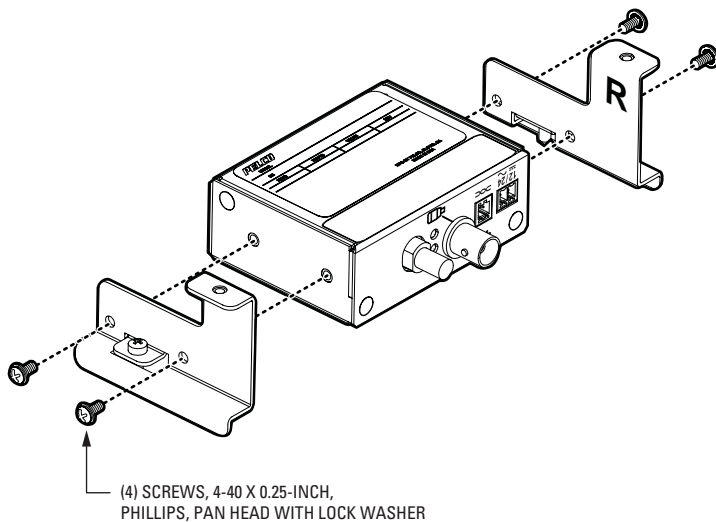


Figure 8. Attaching EH3500 Brackets to FT8301A Transmitter

3. Disconnect power to the enclosure.
4. Unlatch and open the lid of the enclosure.
5. Disconnect power and video cables from the connectors on the camera.

If the enclosure is wired with conduit, skip steps 6-8 below and proceed to step 9. If the enclosure is wired without conduit, proceed to step 6.

6. Pull the power and video cables out of the two glands at the bottom rear of the enclosure.
7. Remove the two glands at the bottom rear of the enclosure.

8. Do the following (refer to Figure 9):
 - a. Using the replacement gland supplied in the EH3500 Series accessory kit, attach the gland to either of the cable entry holes on the enclosure. Note that the replacement gland is shorter than the two glands provided for the enclosure.
 - b. Using the rubber plug supplied in the EH3500 Series accessory kit, attach the plug to the remaining cable entry hole in the enclosure.

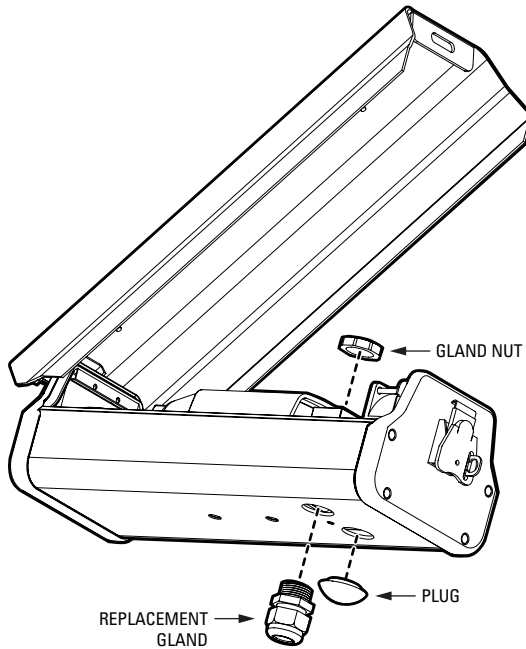
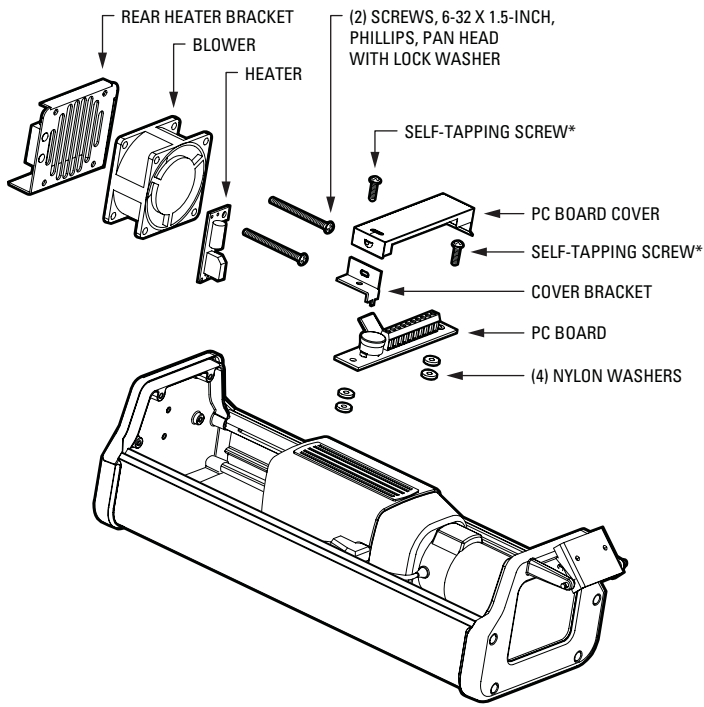


Figure 9. Attaching Replacement Gland and Plug to EH3512/EH3515 Enclosure

9. If the enclosure contains the following accessory items, remove them from the enclosure (refer to Figure 10):
 - a. Remove the heater, blower, and rear heater bracket by loosening the two 6-32 x 1.5-inch Phillips pan head screws and lock washers.
 - b. Remove the PC board cover, cover bracket, PC board, and the associated four nylon washers by loosening the two self-tapping screws. Note that you can discard the self-tapping screws.

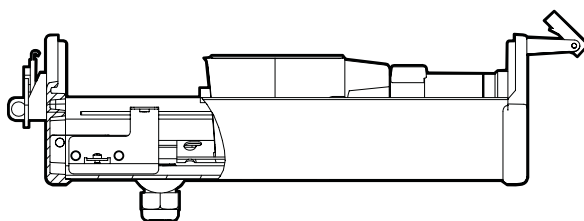
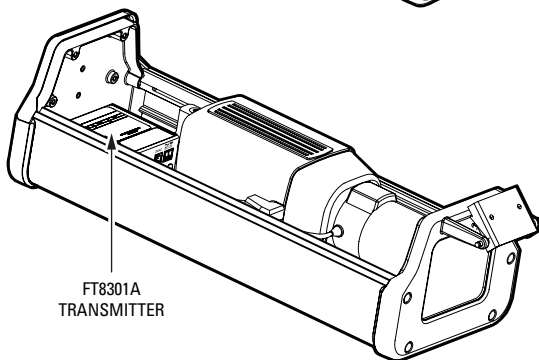
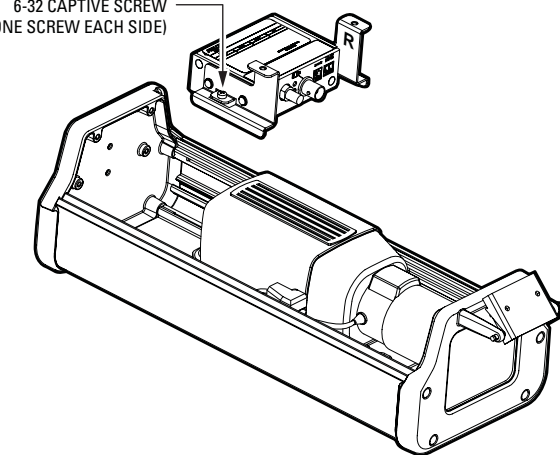


* DISCARD SELF-TAPPING SCREWS.

Figure 10. Removing EH3512/EH3515 Enclosure Accessories

10. Mount the transmitter into the enclosure by doing the following (refer to Figure 11):
 - a. Position the transmitter at the rear of the enclosure with the connectors facing the camera.
 - b. Attach the transmitter to the enclosure by tightening the 6-32 captive screw on the left- and right-mounting EH3500 brackets.

6-32 CAPTIVE SCREW
(ONE SCREW EACH SIDE)



SIDE VIEW OF EH3512/EH3515 ENCLOSURE
WITH FT8301A TRANSMITTER INSTALLED

Figure 11. Mounting FT8301A Transmitter into EH3512/EH3515 Enclosure

11. Connect power, fiber optic, and video cabling to the transmitter by doing the following:
 - a. Insert the power cable through the gland or conduit on the bottom of the enclosure, and then connect the cable to the power connector on the transmitter.
 - b. Insert the fiber optic cable through the gland or conduit on the bottom of the enclosure, and then do the following:



WARNING: When routing the fiber optic cable, be careful not to bend the fiber at a sharp angle. Doing so breaks the fiber.

- (1) Carefully loop the cable around the camera (refer to Figure 12).
 - (2) Connect the cable to the fiber optic connector on the transmitter.
- c. Using the coaxial cable supplied with the transmitter, connect the cable to the BNC connector on the transmitter and on the camera.

NOTE: For additional information about connections to the transmitter, refer to the *Connections* section.

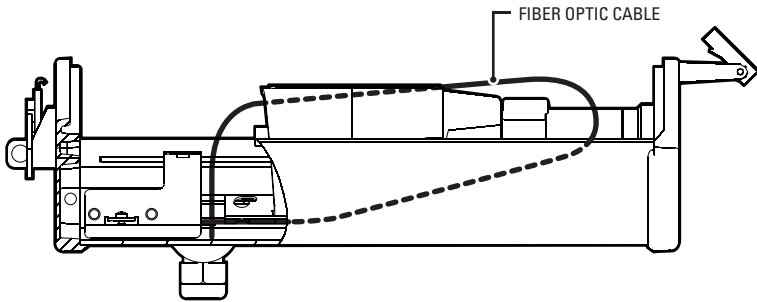


Figure 12. Routing Fiber Optic Cable in EH3512/EH3515 Enclosure

12. Reinstall the enclosure accessories as follows:
 - a. Reattach the rear heater bracket, blower, and heater to the enclosure using the two 6-32 x 1.5-inch Phillips pan head screws and lock washers (refer to Figure 13).
 - b. Attach the PC board and related accessories as follows (refer to Figure 14):
 - (1) Attach the PC board and the cover bracket to the left EH3500 bracket using one 6-32 x 0.5-inch Phillips pan head screw and lock washer and two nylon washers.
 - (2) Attach the other side of the PC board to the right EH3500 bracket using one 6-32 x 0.5-inch Phillips pan head screw and lock washer and two nylon washers.
 - (3) Snap the PC board cover into place.
13. Reconnect power to the camera.
14. Close the lid of the enclosure, and latch the lid.
15. Reconnect power to the enclosure.

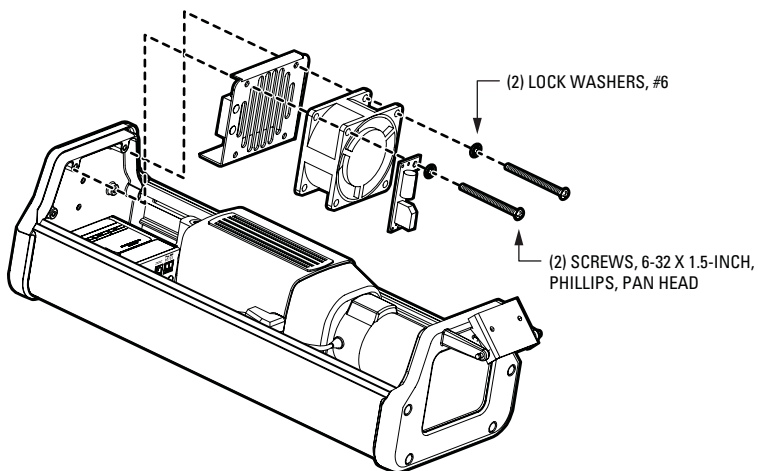


Figure 13. Reinstalling EH3512/EH3515 Heater Bracket, Blower, and Heater

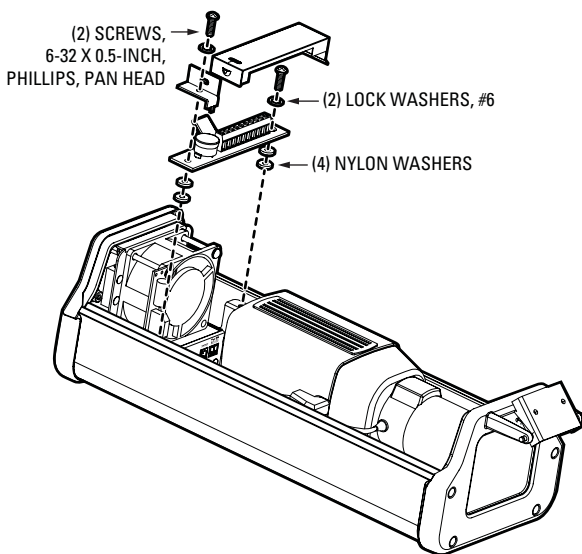


Figure 14. Reinstalling EH3512/EH3515 PC Board

MOUNTING THE TRANSMITTER INTO A DF5/DF8 DOME

The FT8301A transmitter can be mounted into DF5 and DF8 in-ceiling and pendant fixed mount domes. The following sections provide information about the following:

- Mounting the DF5/DF8 bracket to the transmitter
- Mounting the transmitter into a DF5/DF8 in-ceiling dome
- Mounting the transmitter into a DF5/DF8 pendant dome

Mounting the DF5/DF8 Bracket to the Transmitter

The DF5/DF8 accessory kit, which is supplied with the transmitter, contains the DF5/DF8 bracket and associated screws. The DF5/DF8 bracket must be mounted to the transmitter before the transmitter is mounted into a DF5/DF8 fixed mount dome.

To mount the DF5/DF8 bracket to the transmitter, do the following:

1. Using a small Phillips screwdriver, remove the left and right wall-mounting brackets that are attached to the transmitter by loosening the four 4-40 x 0.25-inch Phillips pan head screws (two screws each side).
2. Using the four 4-40 x 0.187-inch Phillips flat head screws and DF5/DF8 bracket supplied in the DF5/DF8 accessory kit, attach the bracket to the transmitter (refer to Figure 15).

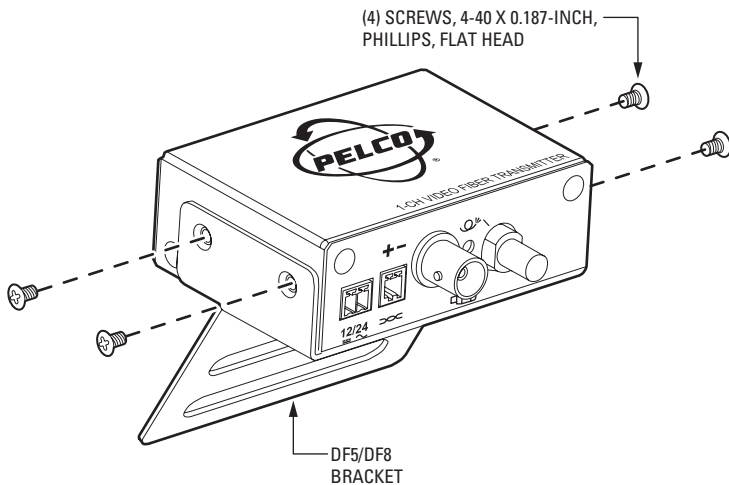


Figure 15. Attaching DF5/DF8 Bracket to FT8301A Transmitter

Mounting the Transmitter into a DF5/DF8 In-Ceiling Dome

The following procedure provides instructions to mount the FT8301A transmitter into an existing DF5/DF8 in-ceiling dome installation.

To mount the transmitter into a DF5/DF8 in-ceiling dome, do the following:

1. Mount the DF5/DF8 bracket to the transmitter (refer to the *Mounting the DF5/DF8 Bracket to the Transmitter* section).
2. Disconnect power to the DF5/DF8 dome.
3. Feed fiber optic cable through the conduit fitting of the dome into the back box.



WARNING: When routing the fiber optic cable, be careful not to bend the fiber at a sharp angle. Doing so breaks the fiber.

4. Feed the power cable for the transmitter through the conduit fitting of the dome into the back box.
5. Remove the lower dome from the back box.
6. Disconnect the power wires and video cable from the connectors on the camera.
7. Using a 7/16-inch wrench, remove the tilt bracket and attached camera from the back box. To do so, loosen the nut on the stud of the tilt bracket, and, while holding the camera securely, remove the nut and associated flat washer and lock washer from the stud (refer to Figure 16).

NOTE: In Figure 16, the pan bracket is removed from the back box for illustration purposes only. You do not need to remove the pan bracket from the back box.

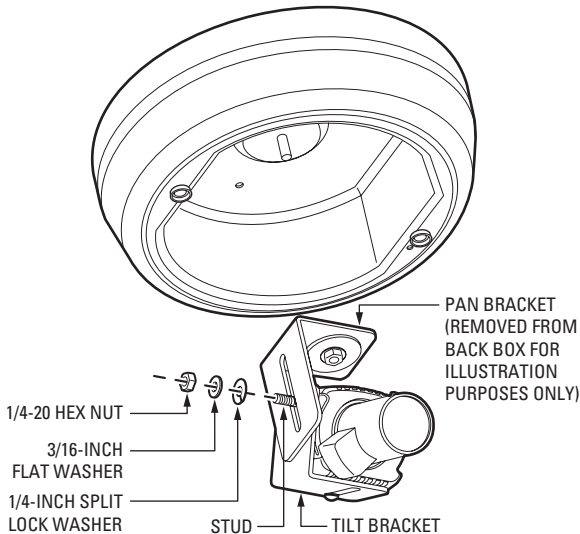


Figure 16. Removing Tilt Bracket from DF5/DF8 In-Ceiling Dome

8. Mount the transmitter into the back box as follows (refer to Figure 17):

NOTE: In Figure 17, the pan bracket is removed from the back box for illustration purposes only. You do not need to remove the pan bracket from the back box.

- a. Do either of the following:
 - If the dome is a DF5 dome, align the inner slot of the DF5/DF8 bracket with the slot in the pan bracket of the back box.
 - If the dome is a DF8 dome, align the outer slot of the DF5/DF8 bracket with the slot in the pan bracket of the back box.
- b. Place the camera into the back box at the desired viewing angle.
- c. Insert the stud on the tilt bracket into the aligned slots of the pan bracket and the DF5/DF8 bracket.
- d. Reinstall the flat washer, lock washer, and nut on the stud of the tilt bracket but do not tighten the nut.
- e. Adjust the viewing angle of the camera as necessary.
- f. Tighten the nut on the stud of the tilt bracket using the 7/16-inch wrench.

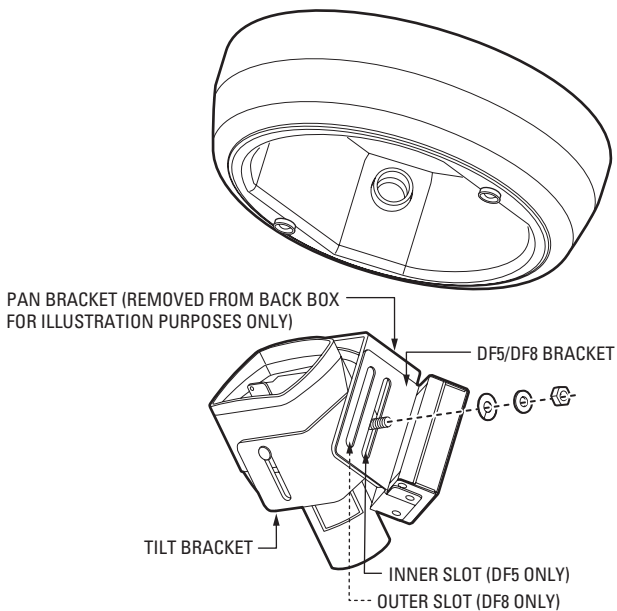


Figure 17. Mounting FT8301A Transmitter into DF5/DF8 In-Ceiling Dome

9. Connect the transmitter as follows:

- a. Connect power to the transmitter.
- b. Route the fiber optic cable around the inside of the back box toward the transmitter and connect the cable to the fiber optic connector on the transmitter.



WARNING: When routing the fiber optic cable, be careful not to bend the fiber at a sharp angle. Doing so breaks the fiber.

- c. Using the coaxial cable supplied with the transmitter, connect the cable to the BNC connector on the transmitter and on the camera.

NOTE: For additional information about connections to the transmitter, refer to the *Connections* section.

10. Reconnect power to the camera.
11. Reattach the lower dome to the back box.
12. Reconnect power to the DF5/DF8 dome.

Mounting the Transmitter into a DF5/DF8 Pendant Dome

The following procedure provides instructions to mount the FT8301A transmitter into an existing DF5/DF8 pendant dome installation.

To mount the transmitter into a DF5/DF8 pendant dome, do the following:

1. Mount the DF5/DF8 bracket to the transmitter (refer to the *Mounting the DF5/DF8 Bracket to the Transmitter* section).
2. Disconnect power to the DF5/DF8 dome.
3. Feed the fiber optic cable through the wiring entrance of the dome into the back box.



WARNING: When routing the fiber optic cable, be careful not to bend the fiber at a sharp angle. Doing so breaks the fiber.

4. Feed the power cable for the transmitter through the wiring entrance of the dome into the back box.
5. Remove the lower dome from the back box.
6. Disconnect the power wires and video cable from the connectors on the camera.
7. Using a 7/16-inch wrench, remove the tilt bracket and attached camera from the back box. To do so, loosen the nut on the stud of the tilt bracket and, while holding the camera securely, remove the nut and associated flat washer and lock washer from the stud (refer to Figure 18).

NOTE: In Figure 18, the pan bracket is removed from the back box for illustration purposes only. You do not need to remove the pan bracket from the back box.

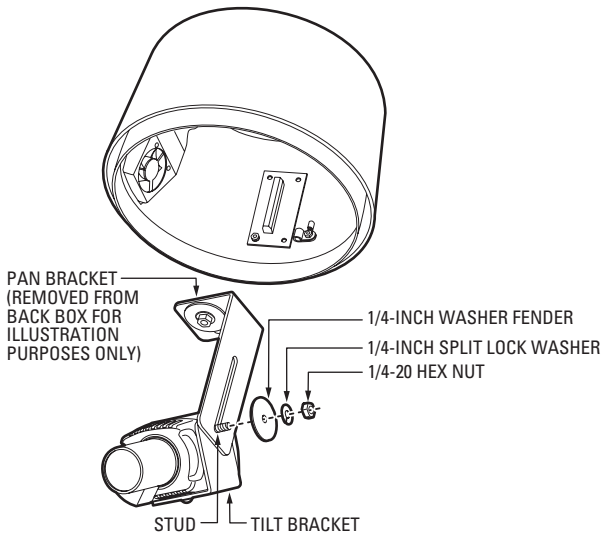


Figure 18. Removing Tilt Bracket from DF5/DF8 Pendant Dome

8. Mount the transmitter into the back box as follows (refer to Figure 19):

NOTE: In Figure 19, the pan bracket is removed from the back box for illustration purposes only. You do not need to remove the pan bracket from the back box.

- a. Do either of the following:
 - If the dome is a DF5 dome, align the inner slot of the DF5/DF8 bracket with the slot in the pan bracket of the back box.
 - If the dome is a DF8 dome, align the outer slot of the DF5/DF8 bracket with the slot in the pan bracket of the back box.
- b. Place the camera into the back box at the desired viewing angle.
- c. Insert the stud on the tilt bracket into the aligned slots of the pan bracket and the DF5/DF8 bracket.
- d. Reinstall the flat washer, lock washer, and nut on the stud of the tilt bracket but do not tighten the nut.
- e. Adjust the viewing angle of the camera as necessary.
- f. Tighten the nut on the stud of the tilt bracket using the 7/16-inch wrench.

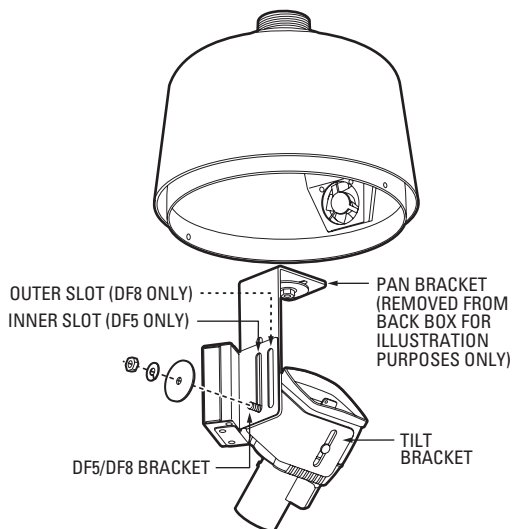


Figure 19. Mounting FT8301A Transmitter into DF5/DF8 Pendant Dome

9. Connect the transmitter as follows:

- a. Connect power to the transmitter.
- b. Route the fiber optic cable around the inside of the back box toward the transmitter and connect the cable to the fiber optic connector on the transmitter.



WARNING: When routing the fiber optic cable, be careful not to bend the fiber at a sharp angle. Doing so breaks the fiber.

- c. Using the coaxial cable supplied with the transmitter, connect the cable to the BNC connector on the transmitter and on the camera.
10. Reconnect power to the camera.
 11. Reattach the lower dome to the back box.
 12. Reconnect power to the DF5/DF8 dome.

Troubleshooting

LED indicators on the FT8301A transmitter (refer to Figure 2) allow you to monitor signal status and laser status. Table A provides information about the indicators and associated troubleshooting guidelines.

NOTE: For troubleshooting information indicated by the LEDs on the associated receiver, refer to the manual supplied with the receiver.

Table A. Troubleshooting with Front-Panel Indicators

| Indicator Color | Meaning | Possible Cause | Corrective Action |
|--------------------------|--|--|---|
| Video Present LED | | | |
| Green | Incoming video signal is present on the channel. | – | No action required. |
| Red | Incoming video signal is not present on the channel. | Video source is not powered on. | Check power connection to the video source. |
| | | Video source is not connected to the transmitter. | Check BNC connections. |
| | | Coaxial cable connected to the transmitter is defective. | Replace cable. |
| Optic Fault LED | | | |
| Not lit | Laser is operating properly. | – | No action required. |
| Flashing red | Laser has shut down. | Transmitter is operating in extreme conditions; for example, operating temperature is below or above recommended range as stated in the <i>Specifications</i> section. | Ensure that transmitter operates according to operating conditions stated in the <i>Specifications</i> section, and then cycle the power. If problem persists, contact Product Support. |

Specifications

VIDEO

| | |
|-----------------------|--|
| Number of Channels | 1 |
| Modulation Type | Pulse code modulation, 8-bit resolution |
| Video Input | BNC, 1.0 Vp-p, 75 ohms or UTP, 100 ohms; NTSC, PAL, and SECAM |
| Bandwidth | 6.5 MHz |
| Gain | Unity |
| Differential Gain | <2% |
| Differential Phase | <1° |
| Tilt | <1% |
| Signal-to-Noise Ratio | >60 dB (CCIR weighted) |

GENERAL

| | |
|--------------------------|--|
| Operating Temperature | -40° to 167°F (-40° to 75°C) |
| Input Power Requirements | 12 VDC or 24 VAC, 140 mA |
| LED Indicators | Video Present Optic Fault |
| Dimensions | 2.25" D x 3.00" W x 1.08" H (5.72 x 7.62 x 2.74 cm) |
| Unit Weight | 0.34 lb (0.15 kg) |

MECHANICAL

| | |
|-------------|--|
| Connectors | |
| Video | BNC UTP, 2-pin connector, spring-cage terminal |
| Power | 2-pin connector, screw terminal |
| Fiber Optic | ST for multimode fiber ST or FC for single-mode fiber |

OPTICAL POWER BUDGET, TRANSMISSION DISTANCE, AND LASER CLASS 1 LIMIT

| FT8301A Miniature Transmitter | Compatible Receivers | Wavelength | Optical Power Budget | Maximum Transmission Distance | Laser Class 1 Limit* |
|---|---------------------------------|-------------------|-------------------------------------|--|-------------------------------------|
| Multimode (62.5/125 μm) | | | | | |
| FT8301AMST | FR8301AMSTR | 850 nm | 20 dB [†] | 2 km (1.2 mi) ^{††} | <0.78 mW |
| | FR8301MSTR | 850 nm | 15 dB [†] | 2 km (1.2 mi) ^{††} | <0.78 mW |
| | FR8302AMSTR-2 | 850 nm | 20 dB [†] | 2 km (1.2 mi) ^{††} | <0.78 mW |
| Multimode - Extended Distance (62.5/125 μm) | | | | | |
| FT8301AMSTE | FR8301AMSTRE | 1310 nm | 26 dB [†] | 6 km (3.7 mi) ^{††} | <15.6 mW |
| | FR8301MSTRE | 1310 nm | 20 dB [†] | 6 km (3.7 mi) ^{††} | <15.6 mW |
| | FR8302AMSTRE-2 | 1310 nm | 26 dB [†] | 6 km (3.7 mi) ^{††} | <15.6 mW |
| Single-Mode (9/125 μm) | | | | | |
| FT8301ASST | FR8301ASSTR | 1310 nm | 28 dB | 46 km (28.6 mi) [§] | <15.6 mW |
| | FR8301SSTR | 1310 nm | 20 dB | 30 km (18.6 mi) [§] | <15.6 mW |
| | FR8302ASSTR-2 | 1310 nm | 28 dB | 46 km (28.6 mi) [§] | <15.6 mW |
| FT8301ASFC | FR8301ASFRCR | 1310 nm | 28 dB | 46 km (28.6 mi) [§] | <15.6 mW |
| | FR8301SFCR | 1310 nm | 20 dB | 30 km (18.6 mi) [§] | <15.6 mW |
| | FR8302ASFRCR-2 | 1310 nm | 28 dB | 46 km (28.6 mi) [§] | <15.6 mW |
| <p>* The FT8301A transmitter and compatible receivers are classified by the FDA as Class 1 laser products.</p> <p>[†]When using 50/125 μm multimode fiber, subtract 3 dB from the optical power budget.</p> <p>^{††}Maximum transmission distance is limited by fiber bandwidth.</p> <p>[§]Maximum transmission distance is based on attenuation of 0.5 dB/km plus a 5 dB buffer for connector and splice losses.</p> <p>NOTES:</p> <ul style="list-style-type: none"> • For conformed coated models, replace the first letter <i>F</i> in the model number with the letter <i>C</i>. The conformed coated version of FT8301AMST, for example, is CT8301AMST. • For models with higher optical power budgets, contact the factory. | | | | | |



This equipment contains electrical or electronic components that must be recycled properly to comply with Directive 2002/96/EC of the European Union regarding the disposal of waste electrical and electronic equipment (WEEE). Contact your local dealer for procedures for recycling this equipment.

PRODUCT WARRANTY AND RETURN INFORMATION

WARRANTY

Pelco will repair or replace, without charge, any merchandise proved defective in material or workmanship **for a period of one year** after the date of shipment.

Exceptions to this warranty are as noted below:

- Five years on FT/FR8000 Series fiber optic products.
- Three years on Genex® Series products (multiplexers, server, and keyboard).
- Three years on Camclosure® and fixed camera models, except the CC3701H-2, CC3701H-2X, CC3751H-2, CC3651H-2X, MC3651H-2, and MC3651H-2X camera models, which have a five-year warranty.
- Three years on PMCL 200/300/400 Series LCD monitors.
- Two years on standard motorized or fixed focal length lenses.
- Two years on Legacy®, CM6700/CM6800/CM9700 Series matrix, and DF5/DF8 Series fixed dome products.
- Two years on Spectra®, Esprit®, ExSite™, and PS20 scanners, including when used in continuous motion applications.
- Two years on Esprit® and WW5700 Series window wiper (excluding wiper blades).
- Two years (except lamp and color wheel) on Digital Light Processing (DLP®) displays. The lamp and color wheel will be covered for a period of 90 days. The air filter is not covered under warranty.
- Eighteen months on DX Series digital video recorders, NVR300 Series network video recorders, and Endura™ Series distributed network-based video products.
- One year (except video heads) on video cassette recorders (VCRs). Video heads will be covered for a period of six months.
- Six months on all pan and tilts, scanners or preset lenses used in continuous motion applications (that is, preset scan, tour and auto scan modes).

Pelco will warrant all replacement parts and repairs for 90 days from the date of Pelco shipment. All goods requiring warranty repair shall be sent freight prepaid to Pelco, Clovis, California. Repairs made necessary by reason of misuse, alteration, normal wear, or accident are not covered under this warranty.

Pelco assumes no risk and shall be subject to no liability for damages or loss resulting from the specific use or application made of the Products. Pelco's liability for any claim, whether based on breach of contract, negligence, infringement of any rights of any party or product liability, relating to the Products shall not exceed the price paid by the Dealer to Pelco for such Products. In no event will Pelco be liable for any special, incidental or consequential damages (including loss of use, loss of profit and claims of third parties) however caused, whether by the negligence of Pelco or otherwise.

The above warranty provides the Dealer with specific legal rights. The Dealer may also have additional rights, which are subject to variation from state to state.

If a warranty repair is required, the Dealer must contact Pelco at (800)289-9100 or (559) 292-1981 to obtain a Repair Authorization number (RA), and provide the following information:

1. Model and serial number
2. Date of shipment, P.O. number, Sales Order number, or Pelco invoice number
3. Details of the defect or problem

If there is a dispute regarding the warranty of a product which does not fall under the warranty conditions stated above, please include a written explanation with the product when returned.

Method of return shipment shall be the same or equal to the method by which the item was received by Pelco.

RETURNS

In order to expedite parts returned to the factory for repair or credit, please call the factory at (800) 289-9100 or (559) 292-1981 to obtain an authorization number (CA number if returned for credit, and RA number if returned for repair).

All merchandise returned for credit may be subject to a 20% restocking and refurbishing charge.

Goods returned for repair or credit should be clearly identified with the assigned CA or RA number and freight should be prepaid. Ship to the appropriate address below.

If you are located within the continental U.S., Alaska, Hawaii or Puerto Rico, send goods to:

Service Department
Pelco
3500 Pelco Way
Clovis, CA 93612-5699

If you are located outside the continental U.S., Alaska, Hawaii or Puerto Rico and are instructed to return goods to the USA, you may do one of the following:

If the goods are to be sent by a COURIER SERVICE, send the goods to:

Pelco
3500 Pelco Way
Clovis, CA 93612-5699 USA

If the goods are to be sent by a FREIGHT FORWARDER, send the goods to:

Pelco c/o Expeditors
473 Eccles Avenue
South San Francisco, CA 94080 USA
Phone: 650-737-1700
Fax: 650-737-0933

REVISION HISTORY

| Manual # | Date | Comments |
|----------|------|-------------------|
| C1680M | 1/06 | Original version. |

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